IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Brisco, et al.	§	Group Art Unit: Unknown
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Serial No.: 10/551,880	§	
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For: APPARATUS FOR RADIALLY EXPANDING AND PLASTICALLY DEFORMING A TUBULAR MEMBER

PRELIMINARY AMENDMENT

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Dear Sir or Madam:

Please amend the above-entitled patent application as follows:

Amendments to the Claims: are reflected in the listing of claims which begins on page 2 of this document.

Remarks/Arguments begin on page 87 of this document.

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. An apparatus for ~~radially expanding and plastically deforming an expandable tubular member, comprising:~~[cutting a tubular member, comprising:]

~~a support member;~~

~~a cutting device for cutting the tubular member coupled to the support member; and~~

~~an expansion device for radially expanding and plastically deforming the tubular member coupled to the support member.~~

[a support member;]~~and~~

a plurality of movable cutting elements coupled to the support member;

an actuator coupled to the support member for moving the cutting elements between a first position and a second position; and

a sensor coupled to the support member for sensing the internal diameter of the tubular member;

wherein in the first position, the cutting elements do not engage the tubular member;

wherein in the second position, the cutting elements engage the tubular member; and

wherein the sensor prevents the cutting elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

2. The apparatus of claim 1, ~~further comprising~~**wherein the cutting elements comprise**:

~~a gripping device for gripping the tubular member coupled to the support member.~~

a first set of cutting elements;

a second set of cutting elements; and

wherein the first set of cutting elements are interleaved with the second set of cutting elements.

3. The apparatus of claim 2, wherein ~~the gripping device comprises a plurality of movable gripping~~**in the first position, the first set of cutting elements are not axially aligned with the second set of cutting** elements.

4. The apparatus of claim ~~3, wherein the gripping elements are moveable in a radial direction relative to the support member~~**2, wherein in the second position, the first**

set of cutting elements are axially aligned with the second set of cutting elements.

5. ~~The~~[An] apparatus ~~of claim 3,~~ [for gripping a tubular member, comprising:]
[a plurality of movable gripping elements] **;**
wherein the gripping elements are moveable ~~in an axial direction relative to the support member~~**from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial and an axial direction**.

6. The apparatus of claim ~~3,~~**5,** wherein ~~the gripping elements are moveable,~~ in a ~~radial and an axial direction relative to the support member.~~**first axial direction, the gripping device grips the tubular member; and wherein, in a second axial direction, the gripping device does not grip the tubular member.**

~~7. The apparatus of claim 3, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial and an axial direction relative to the support member.~~
7. The apparatus of claim 5, further comprising an actuator for moving the gripping elements.

~~8. The apparatus of claim 3, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial direction relative to the support member.~~
8. The apparatus of claim 5,[wherein the gripping elements comprise:]
[a plurality of separate and distinct gripping elements.]

~~9. The apparatus of claim 3, wherein the gripping elements are moveable from a first~~

~~position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in an axial direction relative to the support member.~~

9. [A method of radially expanding and plastically deforming a tubular member, comprising:]

[positioning the tubular member within a preexisting structure;]

[radially expanding and plastically deforming a lower portion of the tubular member to form a bell section; and]

[radially expanding and plastically deforming a portion of the tubular member above the bell section.]

~~10. The apparatus of claim 3, wherein, if the tubular member is displaced in a first axial direction, the gripping device grips the tubular member; and wherein, if the tubular member is displaced in a second axial direction, the gripping device does not grip the tubular member.~~

10. The method of claim 9[wherein positioning the tubular member within a preexisting structure comprises:]

[locking the tubular member to an expansion device.]

11. The ~~apparatus~~**method** of claim ~~3, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, the gripping elements are biased to remain in the first position~~**10, wherein the outside diameter of the expansion device is less than the inside diameter of the tubular member**.

12. The ~~apparatus~~**method** of claim ~~3,~~**10,** wherein the ~~gripping~~**expansion** device ~~further comprises:~~

~~an actuator for moving the gripping elements from a first position to a second position;~~

~~wherein in the first position, the gripping elements do not engage~~**is positioned within** the tubular member;

~~wherein in the second position, the gripping elements do engage the tubular member;~~

~~and~~wherein ~~the actuator is a fluid powered actuator~~.

13. The ~~apparatus of claim 1, further comprising:a sealing device for sealing an interface~~

~~with the tubular member coupled to the support member.~~**method of claim 10, wherein the expansion device comprises an adjustable expansion device.**

14. The ~~apparatus~~**method** of claim 13, wherein the ~~sealing device seals an annulus defines between the support member and the tubular member~~**adjustable expansion device is adjustable to a plurality of sizes**.

15. ~~The apparatus of claim 1, further comprising:a locking device for locking the position of the tubular member relative to the support member.~~ **The method of claim 10, wherein the expansion device comprises a plurality of expansion devices.**

16. ~~The apparatus of claim 1, further comprising:a packer assembly coupled to the support member.~~ **The method of claim 15, wherein at least one of the expansion devices comprises an adjustable expansion device.**

17. The ~~apparatus~~**method** of claim 16, wherein ~~the packer assembly comprises:~~**at least one of the adjustable expansion device is adjustable to a plurality of sizes.**

~~a packer; and~~

~~a packer control device for controlling the operation of the packer coupled to the support member.~~

18. The ~~apparatus of claim 17, wherein the packer~~**method of claim 9**[wherein radially expanding and plastically deforming a lower portion of the tubular member to form a bell section] comprises:

~~a support member defining a passage;~~

~~a shoe comprising a float valve coupled to an end of the support member;~~

~~one or more compressible packer elements movably coupled to the support member; and~~

~~a sliding sleeve valve movably positioned within the passage of the support member.~~

[lowering an expansion device out of an end of the tubular member; and]

[pulling the expansion device through the end of the tubular member.]

19. The ~~apparatus of claim 17, wherein the packer control device~~**method of claim 18, wherein lowering an expansion device out of an end of the tubular member** comprises:

~~a support member;~~

~~one or more drag blocks releasably coupled to the support~~**lowering the expansion**

device out of the end of the tubular member; and

~~a stinger coupled to the support member for engaging the packer.~~

adjusting the size of the expansion device.

20. The ~~apparatus~~**method** of claim ~~17~~,**19,** wherein the ~~packer comprises:~~**adjustable expansion device is adjustable to a plurality of sizes.**

~~a support member defining a passage;~~

~~a shoe comprising a float valve coupled to an end of the support member;~~

~~one or more compressible packer elements movably coupled to the support member; and~~

~~a sliding sleeve valve positioned within the passage of the support member; and~~

~~wherein the packer control device comprises:~~

~~a support member;~~

~~one or more drag blocks releasably coupled to the support member; and~~

~~a stinger coupled to the support member for engaging the sliding sleeve valve.~~

21. The ~~apparatus~~**method** of claim ~~1, further comprising:an actuator for displacing~~**19, wherein** the expansion device ~~relative to the support member~~**comprises a plurality of adjustable expansion devices**.

22. The ~~apparatus~~**method** of claim 21, wherein ~~the actuator comprises:~~**at least one of the adjustable expansion devices is adjustable to a plurality of sizes.**

~~a first actuator for pulling the expansion device; and~~

~~a second actuator for pushing the expansion device.~~

23. The ~~apparatus of claim 21, wherein the actuator comprises means for transferring torsional loads between the support~~**method of claim 18, wherein pulling the expansion device through the end of the tubular member comprises:**

gripping the tubular member**;** and ~~the~~

pulling an expansion device **through an end of the tubular member**.

24. The ~~apparatus of claim 22, wherein the first and second actuators comprise means for transferring torsional loads between the support member and the expansion device.~~**method of claim 24, wherein gripping the tubular member comprises:**

permitting axial displacement of the tubular member in a first direction; and

not permitting axial displacement of the tubular member in a second direction.

25. The ~~apparatus~~**method** of claim 21~~, wherein the actuator comprises a plurality of pistons positioned within corresponding piston chambers~~**25, wherein pulling the expansion device through the end of the tubular member comprises:**

pulling the expansion device through the end of the tubular member using an actuator.

26. The ~~apparatus of claim 1, wherein the cutting device~~**method of claim 9**[wherein radially expanding and plastically deforming a portion of the tubular member above the bell section] comprises:

~~a support~~[lowering an expansion device out of an end of the tubular] member; and

~~a plurality of movable cutting elements coupled to the support member.~~ [pulling the expansion device through the end of the tubular member.]

27. The ~~apparatus~~**method** of claim 26, ~~further comprising~~[wherein lowering an expansion device out of an end of the tubular member comprises]:

~~an actuator coupled to the support member for moving the cutting elements between a first position and a second position;~~

~~wherein in the first position, the cutting elements do not engage the tubular member; and~~

~~wherein in the second position, the cutting elements engage the tubular member.~~

[lowering the expansion device out of the end of the tubular member; and]

[adjusting the size of the expansion device.]

28. The ~~apparatus~~**method** of claim 27, ~~further comprising:a sensor coupled to the support member for sensing the internal diameter of the tubular member.~~**wherein the adjustable expansion device is adjustable to a plurality of sizes.**

~~29. The apparatus of claim 28, wherein the sensor prevents the cutting elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.~~

29. The method of claim 27, wherein the expansion device comprises a plurality of adjustable expansion devices.

30. The ~~apparatus~~**method** of claim ~~27, wherein the cutting elements comprise: a first set of cutting elements; and~~

~~a second set of cutting elements;wherein the first set of cutting elements are interleaved with the second set of cutting elements.~~**29, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.**

~~31. The apparatus of claim 30, wherein in the first position, the first set of cutting elements are not axially aligned with the second set of cutting elements.~~

31. The method of claim 26,[wherein pulling the expansion device through the end of the tubular member comprises:]

[gripping the tubular member; and]

[pulling an expansion device through an end of the tubular member.]

32. ~~The apparatus of claim 30, wherein in the second position, the first set of cutting elements are axially aligned with the second set of cutting elements.~~ **The method of claim 31,**[wherein gripping the tubular member comprises:]

[permitting axial displacement of the tubular member in a first direction; and]

[not permitting axial displacement of the tubular member in a second direction.]

33. The ~~apparatus of claim 1, wherein the expansion device~~**method of claim 31,**[wherein pulling the expansion device through the end of the tubular member] comprises:

~~a support member; and~~

~~a plurality of movable expansion elements coupled to the support member.~~

[pulling the expansion device through the end of the tubular member using an actuator.]

~~34. The apparatus of claim 33, further comprising:~~

~~an actuator coupled to the support member for moving the expansion elements between a first position and a second position;~~

~~wherein in the first position, the expansion elements do not engage the tubular member; and~~

~~wherein in the second position, the expansion elements engage the tubular member.~~

34. The method of claim 26,[wherein pulling the expansion device through the end of the tubular member comprises:]

[pulling the expansion device through the end of the tubular member using fluid pressure.]

35. ~~The apparatus of claim 34, further comprising a sensor coupled to the support member for sensing the internal diameter~~ **The method of claim 34,**[wherein pulling the expansion device through the end] of the tubular member[using fluid pressure comprises:]

[pressurizing an annulus within the tubular member above the expansion device].

36. ~~The apparatus of claim 35, wherein the sensor prevents the expansion elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.~~ **The method of claim 9**[wherein radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:]

[fluidicly sealing an end of the tubular member; and]

[pulling the expansion device through the tubular member] .

37. The ~~apparatus~~**method** of claim ~~34,~~**36,** wherein the expansion ~~elements comprise:~~

~~a first set of expansion elements; and~~

~~a second set of expansion elements;wherein the first set of expansion elements are interleaved with the second set of expansion elements~~**device is adjustable**.

38. The ~~apparatus~~**method** of claim 37, wherein ~~in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements~~**expansion device is adjustable to a plurality of sizes**.

39. The ~~apparatus~~**method** of claim ~~37,~~**36,** wherein ~~in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements~~**expansion device comprises a plurality of adjustable expansion devices**.

40. The ~~apparatus~~**method** of claim ~~1,~~**39,** wherein **at least one of** the ~~expansion device comprises an~~ adjustable expansion ~~device~~**devices is adjustable to a plurality of sizes**.

41. ~~The apparatus of claim 1, wherein the expansion device comprises a plurality of expansion devices.~~ **The method of claim 36,**[wherein pulling the expansion device through the end of the tubular member comprises:]

[gripping the tubular member; and]

[pulling an expansion device through an end of the tubular member] .

42. The ~~apparatus of claim 41, wherein at least one of the expansion devices comprises an adjustable expansion device~~**method of claim 41,**[wherein gripping the tubular member comprises:]

[permitting axial displacement of the tubular member in a first direction; and]

[not permitting axial displacement of the tubular member in a second direction].

43. The ~~apparatus of claim 42, wherein the adjustable expansion device~~**method of claim 41,**[wherein pulling the expansion device through the end of the tubular member] comprises:

~~a support member; and~~

~~a plurality of movable expansion elements coupled to the support member.~~

[pulling the expansion device through the end of the tubular member using an actuator.]

~~44. The apparatus of claim 43, further comprising:~~

~~an actuator coupled to the support member for moving the expansion elements between a first position and a second position;~~

~~wherein in the first position, the expansion elements do not engage the tubular member; and~~

~~wherein in the second position, the expansion elements engage the tubular member.~~

44. The method of claim 36,[wherein pulling the expansion device through the end of the tubular member comprises:]

[pulling the expansion device through the end of the tubular member using fluid pressure.]

45. ~~The apparatus of claim 44, further comprising:a sensor coupled to the support member for sensing the internal diameter.~~ **The method of claim 44,**[wherein pulling the expansion device through the end] of the tubular member[using fluid pressure comprises:]

[pressurizing an annulus within the tubular member above the expansion device].

46. ~~The apparatus of claim 45, wherein the sensor prevents the expansion elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.~~ **The method of claim 9**[wherein radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:]

[overlapping the portion of the tubular member above the bell section with an end of a preexisting tubular member; and]

[pulling an expansion device through the overlapping portions of the tubular member and

the preexisting tubular member] .

47. The ~~apparatus~~**method** of claim 44,**46** wherein the expansion ~~elements comprise: a first set of expansion elements; and a second set of expansion elements;wherein the first set of expansion elements are interleaved with the second set of expansion elements~~**device is adjustable**.

48. The ~~apparatus~~**method** of claim ~~47,~~**47** wherein ~~in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements~~**expansion device is adjustable to a plurality of sizes**.

49. The ~~apparatus~~**method** of claim ~~47,~~**46** wherein ~~in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements~~**expansion device comprises a plurality of adjustable expansion devices**.

~~50. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:~~

~~a support member;~~

~~an expansion device for radially expanding and plastically deforming the tubular member coupled to the support member; and~~

~~an actuator coupled to the support member for displacing the expansion device relative to the support member.~~

50. The method of claim 49, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

~~51. The apparatus of claim 50, further comprising:~~

~~a cutting device coupled to the support member for cutting the tubular member.~~

51. The method of claim 46[wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:]

[gripping the tubular member; and]

[pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member.]

52. The ~~apparatus~~**method** of claim 51, wherein [gripping]the ~~cutting device~~[tubular member] comprises:

~~a support member; and~~

~~a plurality of movable cutting elements coupled to the support member.~~

[permitting axial displacement of the tubular member in a first direction; and]

[not permitting axial displacement of the tubular member in a second direction.]

~~53. The apparatus of claim 52, further comprising:~~

~~an actuator coupled to the support member for moving the cutting elements between a first position and a second position;~~

~~wherein in the first position, the cutting elements do not engage the tubular member; and~~

~~wherein in the second position, the cutting elements engage the tubular member.~~

53. The method of claim 51,[wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:]

[pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using an actuator.]

~~54. The apparatus of claim 53, further comprising:~~

~~a sensor coupled to the support member for sensing the internal diameter of the tubular member.~~

54. The method of claim 46[wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:]

[pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using fluid pressure.]

55. ~~The apparatus of claim 54, wherein the sensor prevents the cutting elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.~~ **The method of claim 54,**[wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using fluid pressure comprises:]

[pressurizing an annulus within the tubular member above the expansion device.]

56. The ~~apparatus~~**method** of claim ~~53, wherein the cutting elements comprise~~**46**[further comprising]:

~~a first set of cutting elements; and~~

~~a second set of cutting elements;~~

~~wherein the first set of cutting elements are interleaved with the second set of cutting~~

~~elements.~~

[cutting an end of the portion of the tubular member that overlaps with the preexisting tubular member.]

~~57. The apparatus of claim 56, wherein in the first position, the first set of cutting elements are not axially aligned with the second set of cutting elements.~~

57. The method of claim 56,[further comprising:]

[removing the cut off end of the expandable tubular member from the preexisting structure.]

~~58. The apparatus of claim 56, wherein in the second position, the first set of cutting elements are axially aligned with the second set of cutting elements.~~

58. The method of claim 9[further comprising:]

[injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the preexisting structure.]

59. The ~~apparatus~~**method** of claim ~~50,~~**9,** further comprising:

~~a gripping device for gripping the~~[cutting off an end of the expandable] tubular member ~~coupled to the support member~~.

60. ~~The apparatus of claim 59, wherein the gripping device comprises a plurality of movable gripping elements.~~ **The method of claim 59,**[further comprising:]

[removing the cut off end of the expandable tubular member from the preexisting structure.]

~~61. The apparatus of claim 60, wherein the gripping elements are moveable in a radial direction relative to the support member.~~

61. [A method of cutting a tubular member, comprising:]

[positioning a plurality of cutting elements within the tubular member; and]

[bringing the cutting elements into engagement with the tubular member.]

62. ~~The apparatus of claim 60, wherein the gripping elements are moveable in an axial direction relative to the support member.~~ **The method of claim 61,**[wherein the cutting elements comprise:]

[a first group of cutting elements; and]

[a second group of cutting elements;]

[wherein the first group of cutting elements are interleaved with the second group of cutting elements.]

63. ~~The apparatus of claim 60, wherein the gripping elements are moveable in a radial and an axial direction relative to the support member.~~ **The method of claim 61,**[wherein bringing the cutting elements into engagement with the tubular member comprises:]

[bringing the cutting elements into axial alignment.]

~~64. The apparatus of claim 60, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial and an axial direction relative to the support member.~~

64. The method of claim 63,[wherein bringing the cutting elements into engagement with the tubular member further comprises:]

[pivoting the cutting elements.]

~~65. The apparatus of claim 60, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial direction relative to the support member.~~

65. The method of claim 63,[wherein bringing the cutting elements into engagement with the tubular member further comprises:]

[translating the cutting elements.]

~~66. The apparatus of claim 60, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in an axial direction relative to the support member.~~

66. The method of claim 63,[wherein bringing the cutting elements into engagement with the tubular member further comprises:]

[pivoting the cutting elements; and]

[translating the cutting elements.]

~~67. The apparatus of claim 50, wherein, if the tubular member is displaced in a first axial direction, the gripping device grips the tubular member; and wherein, if the tubular member is displaced in a second axial direction, the gripping device does not grip the tubular member.~~

67. The method of claim 61,[wherein bringing the cutting elements into engagement with the tubular member comprises:]

[rotating the cutting elements about a common axis.]

~~68. The apparatus of claim 60, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, the gripping elements are biased to remain in the first position.~~

68. The method of claim 61,[wherein bringing the cutting elements into engagement with the tubular member comprises:]

[pivoting the cutting elements about corresponding axes;]

[translating the cutting elements; and]

[rotating the cutting elements about a common axis.]

69. The ~~apparatus~~**method** of claim ~~60, wherein the gripping device~~**61,** further ~~comprises~~[comprising]:

~~an actuator for moving the gripping elements from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and~~

~~wherein the actuator is a fluid powered actuator.~~

[preventing the cutting elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value.]

70. ~~The apparatus of claim 50, further comprising:a sealing device for sealing an interface[with the tubular member]coupled to the support~~ **The method of claim 69,**[wherein preventing the cutting elements from coming into engagement] ~~with the tubular member~~ [with the tubular member]~~coupled to the support~~[if the inside diameter of the tubular member is less than a predetermined value comprises:]

[sensing the inside diameter of the tubular] member.

71. ~~The apparatus of claim 70, wherein the sealing device seals an annulus defines between the support member~~ [A method of gripping a tubular member, comprising:]

[positioning a plurality of gripping elements within the tubular member;] and

[bringing the gripping elements into engagement with] the tubular member.

72. The ~~apparatus of claim 50, further comprising:~~**method of claim 71,**[wherein bringing the gripping elements into engagement with the tubular member comprises:]

~~a locking device for locking the position of the tubular member relative to the support member.~~

[displacing the gripping elements in an axial direction; and]

[displacing the gripping elements in a radial direction.]

73. The ~~apparatus~~**method** of claim ~~50,~~**71,** further comprising:
~~a packer assembly coupled to the support member.~~

[biasing the gripping elements against engagement with the tubular] ~~member.~~ **member.**

~~74. The apparatus of claim 73, wherein the packer assembly comprises:~~

~~a packer; and~~

~~a packer control device for controlling the operation of the packer coupled to the support member.~~

~~75. The apparatus of claim 74, wherein the packer comprises:~~

~~a support member defining a passage;~~

~~a shoe comprising a float valve coupled to an end of the support member;~~

~~one or more compressible packer elements movably coupled to the support member; and~~

~~a sliding sleeve valve movably positioned within the passage of the support member.~~

~~76. The apparatus of claim 74, wherein the packer control device comprises:~~

~~a support member;~~

~~one or more drag blocks releasably coupled to the support member; and~~

~~a stinger coupled to the support member for engaging the packer.~~

~~77. The apparatus of claim 74, wherein the packer comprises:~~

~~a support member defining a passage;~~

~~a shoe comprising a float valve coupled to an end of the support member;~~

one or more compressible packer elements movably coupled to the support member; and

a sliding sleeve valve positioned within the passage of the support member; and

wherein the packer control device comprises:

a support member;

one or more drag blocks releasably coupled to the support member; and

a stinger coupled to the support member for engaging the sliding sleeve valve.

78. The apparatus of claim 50, wherein the expansion device comprises:

a support member; and

a plurality of movable expansion elements coupled to the support member.

79. The apparatus of claim 78, further comprising:

an actuator coupled to the support member for moving the expansion elements between a first position and a second position;

wherein in the first position, the expansion elements do not engage the tubular member; and

wherein in the second position, the expansion elements engage the tubular member.

80. The apparatus of claim 79, further comprising:

a sensor coupled to the support member for sensing the internal diameter of the tubular member.

81. The apparatus of claim 80, wherein the sensor prevents the expansion elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

82. The apparatus of claim 79, wherein the expansion elements comprise:

a first set of expansion elements; and

a second set of expansion elements;

wherein the first set of expansion elements are interleaved with the second set of expansion elements.

83. The apparatus of claim 82, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

84. The apparatus of claim 82, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

85. The apparatus of claim 50, wherein the expansion device comprises an adjustable expansion device.

86. The apparatus of claim 50, wherein the expansion device comprises a plurality of expansion devices.

87. The apparatus of claim 86, wherein at least one of the expansion devices comprises an adjustable expansion device.

88. The apparatus of claim 87, wherein the adjustable expansion device comprises:
a support member; and
a plurality of movable expansion elements coupled to the support member.

89. The apparatus of claim 88, further comprising:
an actuator coupled to the support member for moving the expansion elements between a first position and a second position;
wherein in the first position, the expansion elements do not engage the tubular member; and
wherein in the second position, the expansion elements engage the tubular member.

90. The apparatus of claim 89, further comprising:
a sensor coupled to the support member for sensing the internal diameter of the tubular member.

91. The apparatus of claim 90, wherein the sensor prevents the expansion elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

92. The apparatus of claim 89, wherein the expansion elements comprise:
a first set of expansion elements; and
a second set of expansion elements;

wherein the first set of expansion elements are interleaved with the second set of expansion elements.

93. The apparatus of claim 92, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

94. The apparatus of claim 92, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

95. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:

a support member;

an expansion device for radially expanding and plastically deforming the tubular member coupled to the support member, and

a sealing assembly for sealing an annulus defined between the support member and the tubular member.

96. The apparatus of claim 95, further comprising:

a gripping device for gripping the tubular member coupled to the support member.

97. The apparatus of claim 96, wherein the gripping device comprises a plurality of movable gripping elements.

98. The apparatus of claim 97, wherein the gripping elements are moveable in a radial direction relative to the support member.

99. The apparatus of claim 97, wherein the gripping elements are moveable in an axial direction relative to the support member.

100. The apparatus of claim 97, wherein the gripping elements are moveable in a radial and an axial direction relative to the support member.

101. The apparatus of claim 97, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the

tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial and an axial direction relative to the support member.

102. The apparatus of claim 97, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial direction relative to the support member.

103. The apparatus of claim 97, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in an axial direction relative to the support member.

104. The apparatus of claim 97, wherein, if the tubular member is displaced in a first axial direction, the gripping device grips the tubular member; and wherein, if the tubular member is displaced in a second axial direction, the gripping device does not grip the tubular member.

105. The apparatus of claim 97, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, the gripping elements are biased to remain in the first position.

106. The apparatus of claim 97, wherein the gripping device further comprises:

an actuator for moving the gripping elements from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and

wherein the actuator is a fluid powered actuator.

107. The apparatus of claim 95, further comprising:

a locking device for locking the position of the tubular member relative to the support member.

~~108. The apparatus of claim 95, further comprising:~~
~~a packer assembly coupled to the support member.~~

~~109. The apparatus of claim 108, wherein the packer assembly comprises:~~
~~a packer; and~~
~~a packer control device for controlling the operation of the packer coupled to the support member.~~

~~110. The apparatus of claim 109, wherein the packer comprises:~~
~~a support member defining a passage;~~
~~a shoe comprising a float valve coupled to an end of the support member;~~
~~one or more compressible packer elements movably coupled to the support member; and~~
~~a sliding sleeve valve movably positioned within the passage of the support member.~~

~~111. The apparatus of claim 109, wherein the packer control device comprises:~~
~~a support member;~~
~~one or more drag blocks releasably coupled to the support member; and~~
~~a stinger coupled to the support member for engaging the packer.~~

~~112. The apparatus of claim 109, wherein the packer comprises:~~
~~a support member defining a passage;~~
~~a shoe comprising a float valve coupled to an end of the support member;~~
~~one or more compressible packer elements movably coupled to the support member; and~~
~~a sliding sleeve valve positioned within the passage of the support member; and~~
~~wherein the packer control device comprises:~~
~~a support member;~~
~~one or more drag blocks releasably coupled to the support member; and~~
~~a stinger coupled to the support member for engaging the sliding sleeve valve.~~

~~113. The apparatus of claim 95, further comprising:~~
~~an actuator for displacing the expansion device relative to the support member.~~

~~114. The apparatus of claim 113, wherein the actuator comprises:~~

a first actuator for pulling the expansion device; and

a second actuator for pushing the expansion device.

115. The apparatus of claim 113, wherein the actuator comprises means for transferring torsional loads between the support member and the expansion device.

116. The apparatus of claim 114, wherein the first and second actuators comprise means for transferring torsional loads between the support member and the expansion device.

117. The apparatus of claim 113, wherein the actuator comprises a plurality of pistons positioned within corresponding piston chambers.

118. The apparatus of claim 95, wherein the cutting device comprises:

a support member; and

a plurality of movable cutting elements coupled to the support member.

119. The apparatus of claim 118, further comprising:

an actuator coupled to the support member for moving the cutting elements between a first position and a second position;

wherein in the first position, the cutting elements do not engage the tubular member; and

wherein in the second position, the cutting elements engage the tubular member.

120. The apparatus of claim 119, further comprising:

a sensor coupled to the support member for sensing the internal diameter of the tubular member.

121. The apparatus of claim 120, wherein the sensor prevents the cutting elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

122. The apparatus of claim 119, wherein the cutting elements comprise:

a first set of cutting elements; and

a second set of cutting elements;

wherein the first set of cutting elements are interleaved with the second set of cutting elements.

123. The apparatus of claim 122, wherein in the first position, the first set of cutting elements are not axially aligned with the second set of cutting elements.

124. The apparatus of claim 122, wherein in the second position, the first set of cutting elements are axially aligned with the second set of cutting elements.

125. The apparatus of claim 95, wherein the expansion device comprises:

a support member; and

a plurality of movable expansion elements coupled to the support member.

126. The apparatus of claim 125, further comprising:

an actuator coupled to the support member for moving the expansion elements between a first position and a second position;

wherein in the first position, the expansion elements do not engage the tubular member; and

wherein in the second position, the expansion elements engage the tubular member.

127. The apparatus of claim 126, further comprising:

a sensor coupled to the support member for sensing the internal diameter of the tubular member.

128. The apparatus of claim 127, wherein the sensor prevents the expansion elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

129. The apparatus of claim 126, wherein the expansion elements comprise:

a first set of expansion elements; and

a second set of expansion elements;

wherein the first set of expansion elements are interleaved with the second set of expansion elements.

130. The apparatus of claim 129, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

131. The apparatus of claim 129, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

132. The apparatus of claim 95, wherein the expansion device comprises an adjustable expansion device.

133. The apparatus of claim 95, wherein the expansion device comprises a plurality of expansion devices.

134. The apparatus of claim 133, wherein at least one of the expansion devices comprises an adjustable expansion device.

135. The apparatus of claim 134, wherein the adjustable expansion device comprises:

a support member; and

a plurality of movable expansion elements coupled to the support member.

136. The apparatus of claim 135, further comprising:

an actuator coupled to the support member for moving the expansion elements between a first position and a second position;

wherein in the first position, the expansion elements do not engage the tubular member; and

wherein in the second position, the expansion elements engage the tubular member.

137. The apparatus of claim 136, further comprising:

a sensor coupled to the support member for sensing the internal diameter of the tubular member.

138. The apparatus of claim 137, wherein the sensor prevents the expansion elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

139. The apparatus of claim 136, wherein the expansion elements comprise:

a first set of expansion elements; and

a second set of expansion elements;

wherein the first set of expansion elements are interleaved with the second set of

expansion elements.

140. The apparatus of claim 139, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

141. The apparatus of claim 139, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

142. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:

a support member;

a first expansion device for radially expanding and plastically deforming the tubular member coupled to the support member; and

a second expansion device for radially expanding and plastically deforming the tubular member coupled to the support member.

143. The apparatus of claim 142, further comprising:

a gripping device for gripping the tubular member coupled to the support member.

144. The apparatus of claim 143, wherein the gripping device comprises a plurality of movable gripping elements.

145. The apparatus of claim 144, wherein the gripping elements are moveable in a radial direction relative to the support member.

146. The apparatus of claim 144, wherein the gripping elements are moveable in an axial direction relative to the support member.

147. The apparatus of claim 144, wherein the gripping elements are moveable in a radial and an axial direction relative to the support member.

148. The apparatus of claim 144, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second

position, the gripping elements move in a radial and an axial direction relative to the support member.

149. The apparatus of claim 144, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial direction relative to the support member.

150. The apparatus of claim 144, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in an axial direction relative to the support member.

151. The apparatus of claim 144, wherein, if the tubular member is displaced in a first axial direction, the gripping device gripe the tubular member; and wherein, if the tubular member is displaced in a second axial direction, the gripping device does not grip the tubular member.

152. The apparatus of claim 144, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, the gripping elements are biased to remain in the first position.

153. The apparatus of claim 144, wherein the gripping device further comprises:

an actuator for moving the gripping elements from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and

wherein the actuator is a fluid powered actuator.

154. The apparatus of claim 142, further comprising:

a sealing device for sealing an interface with the tubular member coupled to the support member.

155. The apparatus of claim 154, wherein the sealing device seals an annulus defines between the support member and the tubular member.

156. The apparatus of claim 142, further comprising:
a locking device for locking the position of the tubular member relative to the support member.

157. The apparatus of claim 142, further comprising:
a packer assembly coupled to the support member.

158. The apparatus of claim 157, wherein the packer assembly comprises:
a packer; and
a packer control device for controlling the operation of the packer coupled to the support member.

159. The apparatus of claim 158, wherein the packer comprises:
a support member defining a passage;
a shoe comprising a float valve coupled to an end of the support member;
one or more compressible packer elements movably coupled to the support member; and
a sliding sleeve valve movably positioned within the passage of the support member.

160. The apparatus of claim 158, wherein the packer control device comprises:
a support member;
one or more drag blocks releasably coupled to the support member; and
a stinger coupled to the support member for engaging the packer.

161. The apparatus of claim 158, wherein the packer comprises:
a support member defining a passage;
a shoe comprising a float valve coupled to an end of the support member;
one or more compressible packer elements movably coupled to the support member; and
a sliding sleeve valve positioned within the passage of the support member; and
wherein the packer control device comprises:
a support member;
one or more drag blocks releasably coupled to the support member; and

a stinger coupled to the support member for engaging the sliding sleeve valve.

162. The apparatus of claim 142, further comprising:
an actuator for displacing the expansion device relative to the support member.

163. The apparatus of claim 162, wherein the actuator comprises:
a first actuator for pulling the expansion device; and
a second actuator for pushing the expansion device.

164. The apparatus of claim 162, wherein the actuator comprises means for transferring torsional loads between the support member and the expansion device.

165. The apparatus of claim 163, wherein the first and second actuators comprise means for transferring torsional loads between the support member and the expansion device.

166. The apparatus of claim 162, wherein the actuator comprises a plurality of pistons positioned within corresponding piston chambers.

167. The apparatus of claim 142, further comprising:
a cutting device for cutting the tubular member coupled to the support member.

168. The apparatus of claim 167, wherein the cutting device comprises:
a support member; and
a plurality of movable cutting elements coupled to the support member.

169. The apparatus of claim 168, further comprising:
an actuator coupled to the support member for moving the cutting elements between a first position and a second position;
wherein in the first position, the cutting elements do not engage the tubular member; and
wherein in the second position, the cutting elements engage the tubular member.

170. The apparatus of claim 169, further comprising:
a sensor coupled to the support member for sensing the internal diameter of the tubular member.

171. The apparatus of claim 170, wherein the sensor prevents the cutting elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

172. The apparatus of claim 169, wherein the cutting elements comprise:
a first set of cutting elements; and
a second set of cutting elements;
wherein the first set of cutting elements are interleaved with the second set of cutting elements.

173. The apparatus of claim 172, wherein in the first position, the first set of cutting elements are not axially aligned with the second set of cutting elements.

174. The apparatus of claim 172, wherein in the second position, the first set of cutting elements are axially aligned with the second set of cutting elements.

175. The apparatus of claim 142, wherein at least one of the first second expansion devices comprise:
a support member; and
a plurality of movable expansion elements coupled to the support member.

176. The apparatus of claim 175, further comprising:
an actuator coupled to the support member for moving the expansion elements between a first position and a second position;
wherein in the first position, the expansion elements do not engage the tubular member; and
wherein in the second position, the expansion elements engage the tubular member.

177. The apparatus of claim 176, further comprising:
a sensor coupled to the support member for sensing the internal diameter of the tubular member.

178. The apparatus of claim 177, wherein the sensor prevents the expansion elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

179. The apparatus of claim 176, wherein the expansion elements comprise:
a first set of expansion elements; and
a second set of expansion elements;
wherein the first set of expansion elements are interleaved with the second set of expansion elements.

180. The apparatus of claim 179, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

181. The apparatus of claim 179, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

182. The apparatus of claim 142, wherein at least one of the first and second expansion devices comprise a plurality of expansion devices.

183. The apparatus of claim 182, wherein at least one of the first and second expansion device comprise an adjustable expansion device.

184. The apparatus of claim 183, wherein the adjustable expansion device comprises:
a support member; and
a plurality of movable expansion elements coupled to the support member.

185. The apparatus of claim 184, further comprising:
an actuator coupled to the support member for moving the expansion elements between a first position and a second position;
wherein in the first position, the expansion elements do not engage the tubular member; and
wherein in the second position, the expansion elements engage the tubular member.

186. The apparatus of claim 185, further comprising:
a sensor coupled to the support member for sensing the internal diameter of the tubular member.

187. The apparatus of claim 186, wherein the sensor prevents the expansion elements from

being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

188. The apparatus of claim 185, wherein the expansion elements comprise:
a first set of expansion elements; and
a second set of expansion elements;
wherein the first set of expansion elements are interleaved with the second set of expansion elements.

189. The apparatus of claim 188, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

190. The apparatus of claim 188, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

191. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:
a support member;
an expansion device for radially expanding and plastically deforming the tubular member coupled to the support member; and
a packer coupled to the support member.

192. The apparatus of claim 191, further comprising:
a gripping device for gripping the tubular member coupled to the support member.

193. The apparatus of claim 192, wherein the gripping device comprises a plurality of movable gripping elements.

194. The apparatus of claim 193, wherein the gripping elements are moveable in a radial direction relative to the support member.

195. The apparatus of claim 193, wherein the gripping elements are moveable in an axial direction relative to the support member.

196. The apparatus of claim 193, wherein the gripping elements are moveable in a radial and

an axial direction relative to the support member.

197. The apparatus of claim 193, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial and an axial direction relative to the support member.

198. The apparatus of claim 193, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial direction relative to the support member.

199. The apparatus of claim 193, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in an axial direction relative to the support member.

200. The apparatus of claim 193, wherein, if the tubular member is displaced in a first axial direction, the gripping device grips the tubular member; and wherein, if the tubular member is displaced in a second axial direction, the gripping device does not grip the tubular member.

201. The apparatus of claim 193, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, the gripping elements are biased to remain in the first position.

202. The apparatus of claim 193, wherein the gripping device further comprises:

an actuator for moving the gripping elements from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and

wherein the actuator is a fluid powered actuator.

203. The apparatus of claim 191, further comprising:
a sealing device for sealing an interface with the tubular member coupled to the support member.

204. The apparatus of claim 203, wherein the sealing device seals an annulus defines between the support member and the tubular member.

205. The apparatus of claim 191, further comprising:
a locking device for locking the position of the tubular member relative to the support member.

206. The apparatus of claim 191, wherein the packer assembly comprises:
a packer; and
a packer control device for controlling the operation of the packer coupled to the support member.

207. The apparatus of claim 206, wherein the packer comprises:
a support member defining a passage;
a shoe comprising a float valve coupled to an end of the support member;
one or more compressible packer elements movably coupled to the support member; and
a sliding sleeve valve movably positioned within the passage of the support member.

208. The apparatus of claim 206, wherein the packer control device comprises:
a support member;
one or more drag blocks releasably coupled to the support member; and
a stinger coupled to the support member for engaging the packer.

209. The apparatus of claim 206, wherein the packer comprises:
a support member defining a passage;
a shoe comprising a float valve coupled to an end of the support member;
one or more compressible packer elements movably coupled to the support member; and
a sliding sleeve valve positioned within the passage of the support member; and

wherein the packer control device comprises:

a support member;

one or more drag blocks releasably coupled to the support member; and

a stinger coupled to the support member for engaging the sliding sleeve valve.

210. The apparatus of claim 191, further comprising:

an actuator for displacing the expansion device relative to the support member.

211. The apparatus of claim 210, wherein the actuator comprises:

a first actuator for pulling the expansion device; and

a second actuator for pushing the expansion device.

214. The apparatus of claim 210, wherein the actuator comprises means for transferring torsional loads between the support member and the expansion device.

215. The apparatus of claim 211, wherein the first and second actuators comprise means for transferring torsional loads between the support member and the expansion device.

216. The apparatus of claim 210, wherein the actuator comprises a plurality of pistons positioned within corresponding piston chambers.

217. The apparatus of claim 191, further comprising a cutting device coupled to the support member for cutting the tubular member.

218. The apparatus of claim 217, wherein the cutting device comprises:

a support member; and

a plurality of movable cutting elements coupled to the support member.

219. The apparatus of claim 218, further comprising:

an actuator coupled to the support member for moving the cutting elements between a first position and a second position;

wherein in the first position, the cutting elements do not engage the tubular member; and

wherein in the second position, the cutting elements engage the tubular member.

220. The apparatus of claim 219, further comprising:

a sensor coupled to the support member for sensing the internal diameter of the tubular member.

221. The apparatus of claim 220, wherein the sensor prevents the cutting elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

222. The apparatus of claim 219, wherein the cutting elements comprise:
a first set of cutting elements; and
a second set of cutting elements;
wherein the first set of cutting elements are interleaved with the second set of cutting elements.

223. The apparatus of claim 222, wherein in the first position, the first set of cutting elements are not axially aligned with the second set of cutting elements.

224. The apparatus of claim 222, wherein in the second position, the first set of cutting elements are axially aligned with the second set of cutting elements.

225. The apparatus of claim 191, wherein the expansion device comprises:
a support member; and
a plurality of movable expansion elements coupled to the support member.

226. The apparatus of claim 225, further comprising:
an actuator coupled to the support member for moving the expansion elements between a first position and a second position;
wherein in the first position, the expansion elements do not engage the tubular member; and
wherein in the second position, the expansion elements engage the tubular member.

227. The apparatus of claim 226, further comprising:
a sensor coupled to the support member for sensing the internal diameter of the tubular member.

228. The apparatus of claim 227, wherein the sensor prevents the expansion elements from

being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

229. The apparatus of claim 226, wherein the expansion elements comprise:
a first set of expansion elements; and
a second set of expansion elements;
wherein the first set of expansion elements are interleaved with the second set of expansion elements.

230. The apparatus of claim 229, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

231. The apparatus of claim 229, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

232. The apparatus of claim 191, wherein the expansion device comprises an adjustable expansion device.

233. The apparatus of claim 191, wherein the expansion device comprises a plurality of expansion devices.

234. The apparatus of claim 233, wherein at least one of the expansion devices comprises an adjustable expansion device.

235. The apparatus of claim 234, wherein the adjustable expansion device comprises:
a support member; and
a plurality of movable expansion elements coupled to the support member.

236. The apparatus of claim 235, further comprising:
an actuator coupled to the support member for moving the expansion elements between a first position and a second position;
wherein in the first position, the expansion elements do not engage the tubular member; and
wherein in the second position, the expansion elements engage the tubular member.

~~237. The apparatus of claim 236, further comprising:~~

~~a sensor coupled to the support member for sensing the internal diameter of the tubular member.~~

~~238. The apparatus of claim 237, wherein the sensor prevents the expansion elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.~~

~~239. The apparatus of claim 236, wherein the expansion elements comprise:~~

~~a first set of expansion elements; and~~

~~a second set of expansion elements;~~

~~wherein the first set of expansion elements are interleaved with the second set of expansion elements.~~

~~240. The apparatus of claim 239, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.~~

~~241. The apparatus of claim 239, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.~~242. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:

a support member;

a cutting device for cutting the tubular member coupled to the support member;

a gripping device for gripping the tubular member coupled to the support member;

a sealing device for sealing an interface with the tubular member coupled to the support member;

a locking device for locking the position of the tubular member relative to the support member;

a first adjustable expansion device for radially expanding and plastically deforming the tubular member coupled to the support member;

a second adjustable expansion device for radially expanding and plastically deforming the tubular member coupled to the support member;

a packer coupled to the support member; and

an actuator for displacing one or more of the sealing assembly, first and second adjustable expansion devices, and packer relative to the support member.

~~243. The apparatus of claim 242, wherein the gripping device comprises a plurality of movable gripping elements.~~

~~244. The apparatus of claim 243, wherein the gripping elements are moveable in a radial direction relative to the support member.~~

~~245. The apparatus of claim 243, wherein the gripping elements are moveable in an axial direction relative to the support member.~~

~~246. The apparatus of claim 243, wherein the gripping elements are moveable in a radial and an axial direction relative to the support member.~~

~~247. The apparatus of claim 243, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial and an axial direction relative to the support member.~~

~~248. The apparatus of claim 243, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial direction relative to the support member.~~

~~249. The apparatus of claim 243, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in an axial direction relative to the support member.~~

~~250. The apparatus of claim 243, wherein, if the tubular member is displaced in a first axial direction, the gripping device grips the tubular member; and wherein, if the tubular member is displaced in a second axial direction, the gripping device does not grip the tubular member.~~

~~251. The apparatus of claim 243, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, the gripping elements are biased to remain in the first position.~~

~~252. The apparatus of claim 243, wherein the gripping device further comprises:~~

~~an actuator for moving the gripping elements from a first position to a second position;~~

~~wherein in the first position, the gripping elements do not engage the tubular member;~~

~~wherein in the second position, the gripping elements do engage the tubular member; and~~

~~wherein the actuator is a fluid powered actuator.~~

~~253. The apparatus of claim 242, wherein the sealing device seals an annulus defines between the support member and the tubular member.~~

~~254. The apparatus of claim 242, wherein the packer assembly comprises:~~

~~a packer; and~~

~~a packer control device for controlling the operation of the packer coupled to the support member.~~

~~255. The apparatus of claim 254, wherein the packer comprises:~~

~~a support member defining a passage;~~

~~a shoe comprising a float valve coupled to an end of the support member;~~

~~one or more compressible packer elements movably coupled to the support member; and~~

~~a sliding sleeve valve movably positioned within the passage of the support member.~~

~~256. The apparatus of claim 254, wherein the packer control device comprises:~~

~~a support member;~~

~~one or more drag blocks releasably coupled to the support member; and~~

~~a stinger coupled to the support member for engaging the packer.~~

~~257. The apparatus of claim 254, wherein the packer comprises:~~

~~a support member defining a passage;~~

~~a shoe comprising a float valve coupled to an end of the support member;~~

one or more compressible packer elements movably coupled to the support member; and

a sliding sleeve valve positioned within the passage of the support member; and

wherein the packer control device comprises:

a support member;

one or more drag blocks releasably coupled to the support member; and

a stinger coupled to the support member for engaging the sliding sleeve valve.

258. The apparatus of claim 242, wherein the actuator comprises:

a first actuator for pulling the expansion device; and

a second actuator for pushing the expansion device.

259. The apparatus of claim 242, wherein the actuator comprises means for transferring torsional loads between the support member and the expansion device.

260. The apparatus of claim 258, wherein the first and second actuators comprise means for transferring torsional loads between the support member and the expansion device.

261. The apparatus of claim 242, wherein the actuator comprises a plurality of pistons positioned within corresponding piston chambers.

262. The apparatus of claim 242, wherein the cutting device comprises:

a support member; and

a plurality of movable cutting elements coupled to the support member.

263. The apparatus of claim 262, further comprising:

an actuator coupled to the support member for moving the cutting elements between a first position and a second position;

wherein in the first position, the cutting elements do not engage the tubular member; and

wherein in the second position, the cutting elements engage the tubular member.

264. The apparatus of claim 263, further comprising:

a sensor coupled to the support member for sensing the internal diameter of the tubular member.

265. The apparatus of claim 264, wherein the sensor prevents the cutting elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

266. The apparatus of claim 263, wherein the cutting elements comprise:

a first set of cutting elements; and

a second set of cutting elements;

wherein the first set of cutting elements are interleaved with the second set of cutting elements.

267. The apparatus of claim 266, wherein in the first position, the first set of cutting elements are not axially aligned with the second set of cutting elements.

268. The apparatus of claim 266, wherein in the second position, the first set of cutting elements are axially aligned with the second set of cutting elements.

269. The apparatus of claim 242, wherein at least one of the adjustable expansion devices comprise:

a support member; and

a plurality of movable expansion elements coupled to the support member.

270. The apparatus of claim 269, further comprising:

an actuator coupled to the support member for moving the expansion elements between a first position and a second position;

wherein in the first position, the expansion elements do not engage the tubular member; and

wherein in the second position, the expansion elements engage the tubular member.

271. The apparatus of claim 270, further comprising:

a sensor coupled to the support member for sensing the internal diameter of the tubular member.

272. The apparatus of claim 271, wherein the sensor prevents the expansion elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

273. The apparatus of claim 270, wherein the expansion elements comprise:

a first set of expansion elements; and

a second set of expansion elements;

wherein the first set of expansion elements are interleaved with the second set of expansion elements.

274. The apparatus of claim 273, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

275. The apparatus of claim 273, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

276. The apparatus of claim 242, wherein at least one of the adjustable expansion devices comprise a plurality of expansion devices.

277. The apparatus of claim 276, wherein at least one of the adjustable expansion devices comprise:

a support member; and

a plurality of movable expansion elements coupled to the support member.

278. The apparatus of claim 277, further comprising:

an actuator coupled to the support member for moving the expansion elements between a first position and a second position;

wherein in the first position, the expansion elements do not engage the tubular member; and

wherein in the second position, the expansion elements engage the tubular member.

279. The apparatus of claim 278, further comprising:

a sensor coupled to the support member for sensing the internal diameter of the tubular member.

280. The apparatus of claim 279, wherein the sensor prevents the expansion elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

281. The apparatus of claim 278, wherein the expansion elements comprise:

a first set of expansion elements; and

a second set of expansion elements;

wherein the first set of expansion elements are interleaved with the second set of expansion elements.

282. The apparatus of claim 281, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

283. The apparatus of claim 281, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

284. An apparatus for [cutting a tubular member, comprising:]

[a support member;] and

a plurality of movable cutting elements coupled to the support member.

285. The apparatus of claim 284, further comprising:

an actuator coupled to the support member for moving the cutting elements between a first position and a second position;

wherein in the first position, the cutting elements do not engage the tubular member; and

wherein in the second position, the cutting elements engage the tubular member.

286. The apparatus of claim 285, further comprising:

a sensor coupled to the support member for sensing the internal diameter of the tubular member.

287. The apparatus of claim 286, wherein the sensor prevents the cutting elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

288. The apparatus of claim 285, wherein the cutting elements comprise:

a first set of cutting elements; and

a second set of cutting elements;

wherein the first set of cutting elements are interleaved with the second set of cutting

elements.

289. The apparatus of claim 288, wherein in the first position, the first set of cutting elements are not axially aligned with the second set of cutting elements.

290. The apparatus of claim 288, wherein in the second position, the first set of cutting elements are axially aligned with the second set of cutting elements.

291. An apparatus for engaging a tubular member, comprising:

a support member, and

a plurality of movable elements coupled to the support member.

292. The apparatus of claim 291, further comprising:

an actuator coupled to the support member for moving the elements between a first position and a second position;

wherein in the first position, the elements do not engage the tubular member; and

wherein in the second position, the elements engage the tubular member.

293. The apparatus of claim 292, further comprising:

a sensor coupled to the support member for sensing the internal diameter of the tubular member.

294. The apparatus of claim 293, wherein the sensor prevents the elements from being moved to the second position if the internal diameter of the tubular member is less than a predetermined value.

295. The apparatus of claim 292, wherein the elements comprise:

a first set of elements; and

a second set of elements;

wherein the first set of elements are interleaved with the second set of elements.

296. The apparatus of claim 295, wherein in the first position, the first set of elements are not axially aligned with the second set of elements.

297. The apparatus of claim 295, wherein in the second position, the first set of elements are

axially aligned with the second set of elements.

298. [An] apparatus [for gripping a tubular member, comprising:]
[a plurality of movable gripping elements].

299. The apparatus of claim 298, wherein the gripping elements are moveable in a radial direction.

300. The apparatus of claim 298, wherein the gripping elements are moveable in an axial direction.

301. The apparatus of claim 298, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial and an axial direction.

302. The apparatus of claim 298, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in a radial direction.

303. The apparatus of claim 298, wherein the gripping elements are moveable from a first position to a second position; wherein in the first position, the gripping elements do not engage the tubular member; wherein in the second position, the gripping elements do engage the tubular member; and wherein, during the movement from the first position to the second position, the gripping elements move in an axial direction.

304. The apparatus of claim 298, wherein, in a first axial direction, the gripping device grips the tubular member; and wherein, in a second axial direction, the gripping device does not grip the tubular member.

305. The apparatus of claim 298, further comprising an actuator for moving the gripping elements.

~~306. The apparatus of claim 298,[wherein the gripping elements comprise:]~~
~~[a plurality of separate and distinct gripping elements.]~~

~~307.~~75. An actuator, comprising:
a tubular housing;
a tubular piston rod movably coupled to and at least partially positioned within the housing;
a plurality of annular piston chambers defined by the tubular housing and the tubular piston rod; and
a plurality of tubular pistons coupled to the tubular piston rod, each tubular piston movably positioned within a corresponding annular piston chamber.

~~308. The actuator of claim 307, further comprising means for transmitting torsional loads between the tubular housing and the tubular piston rod.~~

~~309.~~76. An apparatus for controlling a packer, comprising:
a tubular support member;
one or more drag blocks releasably coupled to the tubular support member; and
a tubular stinger coupled to the tubular support member for engaging the packer.

~~310. The apparatus of claim 309, further comprising a tubular sleeve coupled to the drag blocks.~~

~~311. The apparatus of claim 309, wherein the tubular support member comprises one or more axially aligned teeth for engaging the packer.~~

~~312.~~77. A packer comprising:
a support member defining a passage;
a shoe comprising a float valve coupled to an end of the support member;
one or more compressible packer elements movably coupled to the support member; and
a sliding sleeve valve movably positioned within the passage of the support member.

~~313.~~78. A method of radially expanding and plastically deforming an expandable tubular member within a borehole having a preexisting wellbore casing, comprising:
positioning the tubular member within the borehole in overlapping relation to the wellbore

casing;

radially expanding and plastically deforming a portion of the tubular member to form a bell section; and

radially expanding and plastically deforming a portion of the tubular member above the bell section comprising a portion of the tubular member that overlaps with the wellbore casing;

wherein the inside diameter of the bell section is greater than the inside diameter of the radially expanded and plastically deformed portion of the tubular member above the bell section.

~~314. The method of claim 313, wherein radially expanding and plastically deforming a portion of the tubular member to form a bell section comprises:~~

~~positioning an adjustable expansion device within the expandable tubular member;~~

~~supporting the expandable tubular member and the adjustable expansion device within the borehole;~~

~~lowering the adjustable expansion device out of the expandable tubular member;~~

~~increasing the outside dimension of the adjustable expansion device; and~~

~~displacing the adjustable expansion device upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member, wherein n is greater than or equal to 1.~~

~~315.~~79. A method for forming a mono diameter wellbore casing, comprising:

positioning an adjustable expansion device within a first expandable tubular member;

supporting the first expandable tubular member and the adjustable expansion device within a borehole;

lowering the adjustable expansion device out of the first expandable tubular member;

increasing the outside dimension of the adjustable expansion device;

displacing the adjustable expansion device upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the borehole;

positioning the adjustable expansion device within a second expandable tubular member;

supporting the second expandable tubular member and the adjustable expansion device within the borehole in overlapping relation to the first expandable tubular member;

lowering the adjustable expansion device out of the second expandable tubular member;

increasing the outside dimension of the adjustable expansion device; and

displacing the adjustable expansion device upwardly relative to the second expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the borehole.

~~316.~~ 80. A method for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

positioning an adjustable expansion device within the expandable tubular member;

supporting the expandable tubular member and the adjustable expansion device within the borehole;

lowering the adjustable expansion device out of the expandable tubular member;

increasing the outside dimension of the adjustable expansion device;

displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member within the borehole; and

pressurizing an interior region of the expandable tubular member above the adjustable expansion device during the radial expansion and plastic deformation of the expandable tubular member within the borehole.

~~317.~~ 81. A method for forming a mono diameter wellbore casing, comprising:

positioning an adjustable expansion device within a first expandable tubular member;

supporting the first expandable tubular member and the adjustable expansion device within a borehole;

lowering the adjustable expansion device out of the first expandable tubular member;

increasing the outside dimension of the adjustable expansion device;

displacing the adjustable expansion device upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the borehole;

pressurizing an interior region of the first expandable tubular member above the adjustable expansion device during the radial expansion and plastic deformation of the first expandable tubular member within the borehole;

positioning the adjustable expansion mandrel within a second expandable tubular member;

supporting the second expandable tubular member and the adjustable expansion

mandrel within the borehole in overlapping relation to the first expandable tubular member;

lowering the adjustable expansion mandrel out of the second expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel;

displacing the adjustable expansion mandrel upwardly relative to the second expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the borehole; and

pressurizing an interior region of the second expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the second expandable tubular member within the borehole.

~~318. A method for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:~~

~~positioning first and second adjustable expansion devices within the expandable tubular member;~~

~~supporting the expandable tubular member and the first and second adjustable expansion devices within the borehole;~~

~~lowering the first adjustable expansion device out of the expandable tubular member;~~

~~increasing the outside dimension of the first adjustable expansion device;~~

~~displacing the first adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform a lower portion of the expandable tubular member;~~

~~displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the expandable tubular member;~~

~~decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device;~~

~~displacing the second adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform portions of the expandable tubular member above the lower portion of the expandable tubular member;~~

~~wherein the outside dimension of the first adjustable expansion device is greater than the outside dimension of the second adjustable expansion device.~~

~~319. A method for forming a mono diameter wellbore casing, comprising:~~

positioning first and second adjustable expansion devices within a first expandable tubular member;

supporting the first expandable tubular member and the first and second adjustable expansion devices within a borehole;

lowering the first adjustable expansion device out of the first expandable tubular member;

increasing the outside dimension of the first adjustable expansion device;

displacing the first adjustable expansion device upwardly relative to the first expandable tubular member to radially expand and plastically deform a lower portion of the first expandable tubular member;

displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the first expandable tubular member;

decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device;

displacing the second adjustable expansion device upwardly relative to the first expandable tubular member to radially expand and plastically deform portions of the first expandable tubular member above the lower portion of the expandable tubular member;

positioning first and second adjustable expansion devices within a second expandable tubular member;

supporting the first expandable tubular member and the first and second adjustable expansion devices within the borehole in overlapping relation to the first expandable tubular member;

lowering the first adjustable expansion device out of the second expandable tubular member;

increasing the outside dimension of the first adjustable expansion device;

displacing the first adjustable expansion device upwardly relative to the second expandable tubular member to radially expand and plastically deform a lower portion of the second expandable tubular member;

displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the second expandable tubular member;

decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device; and

displacing the second adjustable expansion device upwardly relative to the second

expandable tubular member to radially expand and plastically deform portions of the second expandable tubular member above the lower portion of the second expandable tubular member;

wherein the outside dimension of the first adjustable expansion device is greater than the outside dimension of the second adjustable expansion device.

320. A method for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

positioning first and second adjustable expansion devices within the expandable tubular member;

supporting the expandable tubular member and the first and second adjustable expansion devices within the borehole;

lowering the first adjustable expansion device out of the expandable tubular member;

increasing the outside dimension of the first adjustable expansion device;

displacing the first adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform a lower portion of the expandable tubular member;

pressurizing an interior region of the expandable tubular member above the first adjustable expansion device during the radial expansion of the lower portion of the expandable tubular member by the first adjustable expansion device;

displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the expandable tubular member;

decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device;

displacing the second adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform portions of the expandable tubular member above the lower portion of the expandable tubular member; and

pressurizing an interior region of the expandable tubular member above the second adjustable expansion device during the radial expansion of the portions of the expandable tubular member above the lower portion of the expandable tubular member by the second adjustable expansion device;

wherein the outside dimension of the first adjustable expansion device is greater than the outside dimension of the second adjustable expansion device.

321. A method for forming a mono diameter wellbore casing, comprising:

positioning first and second adjustable expansion devices within a first expandable tubular member;

supporting the first expandable tubular member and the first and second adjustable expansion devices within a borehole;

lowering the first adjustable expansion device out of the first expandable tubular member;

increasing the outside dimension of the first adjustable expansion device;

displacing the first adjustable expansion device upwardly relative to the first expandable tubular member to radially expand and plastically deform a lower portion of the first expandable tubular member;

pressurizing an interior region of the first expandable tubular member above the first adjustable expansion device during the radial expansion of the lower portion of the first expandable tubular member by the first adjustable expansion device;

displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the first expandable tubular member;

decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device;

displacing the second adjustable expansion device upwardly relative to the first expandable tubular member to radially expand and plastically deform portions of the first expandable tubular member above the lower portion of the expandable tubular member;

pressurizing an interior region of the first expandable tubular member above the second adjustable expansion device during the radial expansion of the portions of the first expandable tubular member above the lower portion of the first expandable tubular member by the second adjustable expansion device;

positioning first and second adjustable expansion devices within a second expandable tubular member;

supporting the first expandable tubular member and the first and second adjustable expansion devices within the borehole in overlapping relation to the first expandable tubular member;

lowering the first adjustable expansion device out of the second expandable tubular member;

increasing the outside dimension of the first adjustable expansion device;

displacing the first adjustable expansion device upwardly relative to the second

~~expandable tubular member to radially expand and plastically deform a lower portion of the second expandable tubular member;~~

~~pressurizing an interior region of the second expandable tubular member above the first adjustable expansion device during the radial expansion of the lower portion of the second expandable tubular member by the first adjustable expansion device;~~

~~displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the second expandable tubular member;~~

~~decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device;~~

~~displacing the second adjustable expansion device upwardly relative to the second expandable tubular member to radially expand and plastically deform portions of the second expandable tubular member above the lower portion of the second expandable tubular member; and~~

~~pressurizing an interior region of the second expandable tubular member above the second adjustable expansion device during the radial expansion of the portions of the second expandable tubular member above the lower portion of the second expandable tubular member by the second adjustable expansion device;~~

~~wherein the outside dimension of the first adjustable expansion device is greater than the outside dimension of the second adjustable expansion device.~~

~~322.~~**82.** A method for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion device within the borehole;

increasing the size of the adjustable expansion device; and

displacing the adjustable expansion device upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform a portion of the expandable tubular member.

~~323. The method of claim 322, further comprising:~~

~~reducing the size of the adjustable expansion device after the portion of the expandable tubular member has been radially expanded and plastically deformed.~~

~~324. The method of claim 323, further comprising:~~

~~fluidicly sealing the radially expanded and plastically deformed end of the expandable~~

~~tubular member after reducing the size of the adjustable expansion device.~~

~~325. The method of claim 324, further comprising:~~

~~permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.~~

~~326. The method of claim 325, further comprising:~~

~~injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and a preexisting structure after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.~~

~~327. The method of claim 325, further comprising:~~

~~increasing the size of the adjustable expansion device after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.~~

~~328. The method of claim 327, further comprising:~~

~~displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform another portion of the expandable tubular member.~~

~~329. The method of claim 328, further comprising:~~

~~if the end of the other portion of the expandable tubular member overlaps with a preexisting structure, then~~

~~not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator; and~~

~~displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the other portion of the expandable tubular member that overlaps with the preexisting structure.~~

~~330.~~83. A method for forming a mono diameter wellbore casing within a borehole that

includes a preexisting wellbore casing, comprising:

supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion device within the borehole;

increasing the size of the adjustable expansion device;

displacing the adjustable expansion device upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform a portion of the expandable tubular member; and

displacing the adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member and a portion of the preexisting wellbore casing that overlaps with an end of the remaining portion of the expandable tubular member.

~~331. The method of claim 330, further comprising:~~

~~reducing the size of the adjustable expansion device after the portion of the expandable tubular member has been radially expanded and plastically deformed.~~

~~332. The method of claim 331, further comprising:~~

~~fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member after reducing the size of the adjustable expansion device.~~

~~333. The method of claim 332, further comprising:~~

~~permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.~~

~~334. The method of claim 333, further comprising:~~

~~injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the borehole after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.~~

~~335. The method of claim 333, further comprising:~~

~~increasing the size of the adjustable expansion device after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.~~

~~336. The method of claim 335, further comprising:~~

~~displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member.~~

~~337. The method of claim 336, further comprising:~~

~~not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator; and~~

~~displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the remaining portion of the expandable tubular member that overlaps with the preexisting wellbore casing after not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.~~

~~338. [A method of radially expanding and plastically deforming a tubular member, comprising:]~~

~~[positioning the tubular member within a preexisting structure;]~~

~~[radially expanding and plastically deforming a lower portion of the tubular member to form a bell section; and]~~

~~[radially expanding and plastically deforming a portion of the tubular member above the bell section.]~~

~~339. The method of claim 338,[wherein positioning the tubular member within a preexisting structure comprises:]~~

~~[locking the tubular member to an expansion device.]~~

~~340. The method of claim 339, wherein the outside diameter of the expansion device is less than the inside diameter of the tubular member.~~

~~341. The method of claim 339, wherein the expansion device is positioned within the tubular member.~~

~~342. The method of claim 339, wherein the expansion device comprises an adjustable~~

~~expansion device.~~

~~343. The method of claim 342, wherein the adjustable expansion device is adjustable to a plurality of sizes.~~

~~344. The method of claim 339, wherein the expansion device comprises a plurality of expansion devices.~~

~~345. The method of claim 344, wherein at least one of the expansion devices comprises an adjustable expansion device.~~

~~346. The method of claim 345, wherein at least one of the adjustable expansion device is adjustable to a plurality of sizes.~~

~~347. The method of claim 338,[wherein radially expanding and plastically deforming a lower portion of the tubular member to form a bell section] comprises:~~

~~[lowering an expansion device out of an end of the tubular member; and]~~

~~[pulling the expansion device through the end of the tubular member.]~~

~~348. The method of claim 347, wherein lowering an expansion device out of an end of the tubular member comprises:~~

~~lowering the expansion device out of the end of the tubular member; and~~

~~adjusting the size of the expansion device.~~

~~349. The method of claim 348, wherein the adjustable expansion device is adjustable to a plurality of sizes.~~

~~350. The method of claim 348, wherein the expansion device comprises a plurality of adjustable expansion devices.~~

~~351. The method of claim 350, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.~~

~~352. The method of claim 347, wherein pulling the expansion device through the end of the tubular member comprises:~~

~~gripping the tubular member; and~~

~~pulling an expansion device through an end of the tubular member.~~

~~353. The method of claim 352, wherein gripping the tubular member comprises:~~

~~permitting axial displacement of the tubular member in a first direction; and~~

~~not permitting axial displacement of the tubular member in a second direction.~~

~~354. The method of claim 352, wherein pulling the expansion device through the end of the tubular member comprises:~~

~~pulling the expansion device through the end of the tubular member using an actuator.~~

~~355. The method of claim 338,[wherein radially expanding and plastically deforming a portion of the tubular member above the bell section] comprises:~~

~~[lowering an expansion device out of an end of the tubular] member; and~~

~~[pulling the expansion device through the end of the tubular member.]~~

~~356. The method of claim 355, [wherein lowering an expansion device out of an end of the tubular member comprises]:~~

~~[lowering the expansion device out of the end of the tubular member; and]~~

~~[adjusting the size of the expansion device.]~~

~~357. The method of claim 356, wherein the adjustable expansion device is adjustable to a plurality of sizes.~~

~~358. The method of claim 356, wherein the expansion device comprises a plurality of adjustable expansion devices.~~

~~359. The method of claim 358, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.~~

~~360. The method of claim 355,[wherein pulling the expansion device through the end of the tubular member comprises:]~~

~~[gripping the tubular member; and]~~

~~[pulling an expansion device through an end of the tubular member.]~~

361. The method of claim 360,[wherein gripping the tubular member comprises:]
[permitting axial displacement of the tubular member in a first direction; and]
[not permitting axial displacement of the tubular member in a second direction.]

362. The method of claim 360,[wherein pulling the expansion device through the end of the tubular member] comprises:
[pulling the expansion device through the end of the tubular member using an actuator.]

363. The method of claim 355,[wherein pulling the expansion device through the end of the tubular member comprises:]
[pulling the expansion device through the end of the tubular member using fluid pressure.]

364. The method of claim 363,[wherein pulling the expansion device through the end] of the tubular member[using fluid pressure comprises:]
[pressurizing an annulus within the tubular member above the expansion device].

365. The method of claim 338,[wherein radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:]
[fluidicly sealing an end of the tubular member; and]
[pulling the expansion device through the tubular member].

366. The method of claim 365, wherein the expansion device is adjustable.

367. The method of claim 366, wherein the expansion device is adjustable to a plurality of sizes.

368. The method of claim 365, wherein the expansion device comprises a plurality of adjustable expansion devices.

369. The method of claim 368, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

370. The method of claim 365,[wherein pulling the expansion device through the end of the tubular member comprises:]
[gripping the tubular member; and]

[pulling an expansion device through an end of the tubular member].

371. The method of claim 370,[wherein gripping the tubular member comprises:]
[permitting axial displacement of the tubular member in a first direction; and]
[not permitting axial displacement of the tubular member in a second direction].

372. The method of claim 370,[wherein pulling the expansion device through the end of the tubular member] comprises:
[pulling the expansion device through the end of the tubular member using an actuator.]

373. The method of claim 365,[wherein pulling the expansion device through the end of the tubular member comprises:]
[pulling the expansion device through the end of the tubular member using fluid pressure.]

374. The method of claim 373,[wherein pulling the expansion device through the end] of the tubular member[using fluid pressure comprises:]
[pressurizing an annulus within the tubular member above the expansion device].

375. The method of claim 338,[wherein radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:]
[overlapping the portion of the tubular member above the bell section with an end of a preexisting tubular member; and]
[pulling an expansion device through the overlapping portions of the tubular member and the preexisting tubular member].

376. The method of claim 375, wherein the expansion device is adjustable.

377. The method of claim 376, wherein the expansion device is adjustable to a plurality of sizes.

378. The method of claim 375, wherein the expansion device comprises a plurality of adjustable expansion devices.

379. The method of claim 378, wherein at least one of the adjustable expansion devices is

adjustable to a plurality of sizes.

380. The method of claim 375,[wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:]

[gripping the tubular member; and]

[pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member.]

381. The method of claim 380, wherein [gripping]the [tubular member] comprises:

[permitting axial displacement of the tubular member in a first direction; and]

[not permitting axial displacement of the tubular member in a second direction.]

382. The method of claim 380,[wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:]

[pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using an actuator.]

383. The method of claim 375,[wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:]

[pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using fluid pressure.]

384. The method of claim 383,[wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using fluid pressure comprises:]

[pressurizing an annulus within the tubular member above the expansion device.]

385. The method of claim 375,[further comprising]:

[cutting an end of the portion of the tubular member that overlaps with the preexisting tubular member.]

386. The method of claim 385,[further comprising:]

[removing the cut off end of the expandable tubular member from the preexisting structure.]

~~387. The method of claim 338,[further comprising:]~~

~~[injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the preexisting structure.]~~

~~388. The method of claim 338, further comprising:~~

~~[cutting off an end of the expandable] tubular member.~~

~~389. The method of claim 388,[further comprising:]~~

~~[removing the cut off end of the expandable tubular member from the preexisting structure.]~~

~~390.~~**84.** A method of radially expanding and plastically deforming a tubular member, comprising:

applying internal pressure **simultaneously** to the inside surface of the tubular member at a plurality of discrete ~~location~~**locations** separated from one another.

~~391.~~**85.** A system for radially expanding and plastically deforming an expandable tubular member within a borehole having a preexisting wellbore casing, comprising:

means for positioning the tubular member within the borehole in overlapping relation to the wellbore casing;

means for radially expanding and plastically deforming a portion of the tubular member to form a bell section; and

means for radially expanding and plastically deforming a portion of the tubular member above the bell section comprising a portion of the tubular member that overlaps with the wellbore casing;

wherein the inside diameter of the bell section is greater than the inside diameter of the radially expanded and plastically deformed portion of the tubular member above the bell section.

~~392. The system of claim 391, wherein means for radially expanding and plastically deforming a portion of the tubular member to form a bell section comprises:~~

~~means for positioning an adjustable expansion device within the expandable tubular member;~~

~~means for supporting the expandable tubular member and the adjustable expansion device within the borehole;~~

~~means for lowering the adjustable expansion device out of the expandable tubular member;~~

~~means for increasing the outside dimension of the adjustable expansion device; and~~

~~means for displacing the adjustable expansion device upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member, wherein n is greater than or equal to 1.~~

~~393.~~**86.** A system for forming a mono diameter wellbore casing, comprising:

means for positioning an adjustable expansion device within a first expandable tubular member;

means for supporting the first expandable tubular member and the adjustable expansion device within a borehole;

means for lowering the adjustable expansion device out of the first expandable tubular member;

means for increasing the outside dimension of the adjustable expansion device;

means for displacing the adjustable expansion device upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the borehole;

means for positioning the adjustable expansion device within a second expandable tubular member;

means for supporting the second expandable tubular member and the adjustable expansion device within the borehole in overlapping relation to the first expandable tubular member;

means for lowering the adjustable expansion device out of the second expandable tubular member;

means for increasing the outside dimension of the adjustable expansion device; and

means for displacing the adjustable expansion device upwardly relative to the second expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the borehole.

~~394.~~**87.** A system for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

means for positioning an adjustable expansion device within the expandable tubular member;

means for supporting the expandable tubular member and the adjustable expansion device within the borehole;

means for lowering the adjustable expansion device out of the expandable tubular member;

means for increasing the outside dimension of the adjustable expansion device;

means for displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member within the borehole; and

means for pressurizing an interior region of the expandable tubular member above the adjustable expansion device during the radial expansion and plastic deformation of the expandable tubular member within the borehole.

~~395.~~ **88.** A system for forming a mono diameter wellbore casing, comprising:

means for positioning an adjustable expansion device within a first expandable tubular member;

means for supporting the first expandable tubular member and the adjustable expansion device within a borehole;

means for lowering the adjustable expansion device out of the first expandable tubular member;

means for increasing the outside dimension of the adjustable expansion device;

means for displacing the adjustable expansion device upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the borehole;

means for pressurizing an interior region of the first expandable tubular member above the adjustable expansion device during the radial expansion and plastic deformation of the first expandable tubular member within the borehole;

means for positioning the adjustable expansion mandrel within a second expandable tubular member;

means for supporting the second expandable tubular member and the adjustable expansion mandrel within the borehole in overlapping relation to the first expandable tubular member;

means for lowering the adjustable expansion mandrel out of the second expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel;

means for displacing the adjustable expansion mandrel upwardly relative to the second

expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the borehole; and

means for pressurizing an interior region of the second expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the second expandable tubular member within the borehole.

~~396. A system for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:~~

~~means for positioning first and second adjustable expansion devices within the expandable tubular member;~~

~~means for supporting the expandable tubular member and the first and second adjustable expansion devices within the borehole;~~

~~means for lowering the first adjustable expansion device out of the expandable tubular member;~~

~~means for increasing the outside dimension of the first adjustable expansion device;~~

~~means for displacing the first adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform a lower portion of the expandable tubular member;~~

~~means for displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the expandable tubular member;~~

~~means for decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device;~~

~~means for displacing the second adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform portions of the expandable tubular member above the lower portion of the expandable tubular member;~~

~~wherein the outside dimension of the first adjustable expansion device is greater than the outside dimension of the second adjustable expansion device.~~

~~397. A system for forming a mono diameter wellbore casing, comprising:~~

~~means for positioning first and second adjustable expansion devices within a first expandable tubular member;~~

~~means for supporting the first expandable tubular member and the first and second adjustable expansion devices within a borehole;~~

~~means for lowering the first adjustable expansion device out of the first expandable~~

tubular member;

means for increasing the outside dimension of the first adjustable expansion device;

displacing the first adjustable expansion device upwardly relative to the first expandable tubular member to radially expand and plastically deform a lower portion of the first expandable tubular member;

means for displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the first expandable tubular member;

means for decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device;

means for displacing the second adjustable expansion device upwardly relative to the first expandable tubular member to radially expand and plastically deform portions of the first expandable tubular member above the lower portion of the expandable tubular member;

means for positioning first and second adjustable expansion devices within a second expandable tubular member;

means for supporting the first expandable tubular member and the first and second adjustable expansion devices within the borehole in overlapping relation to the first expandable tubular member;

means for lowering the first adjustable expansion device out of the second expandable tubular member;

means for increasing the outside dimension of the first adjustable expansion device;

displacing the first adjustable expansion device upwardly relative to the second expandable tubular member to radially expand and plastically deform a lower portion of the second expandable tubular member;

means for displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the second expandable tubular member;

means for decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device; and

means for displacing the second adjustable expansion device upwardly relative to the second expandable tubular member to radially expand and plastically deform portions of the second expandable tubular member above the lower portion of the second expandable tubular member;

wherein the outside dimension of the first adjustable expansion device is greater than the outside dimension of the second adjustable expansion device.

398. A system for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

means for positioning first and second adjustable expansion devices within the expandable tubular member;

means for supporting the expandable tubular member and the first and second adjustable expansion devices within the borehole;

means for lowering the first adjustable expansion device out of the expandable tubular member;

means for increasing the outside dimension of the first adjustable expansion device;

means for displacing the first adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform a lower portion of the expandable tubular member;

means for pressurizing an interior region of the expandable tubular member above the first adjustable expansion device during the radial expansion of the lower portion of the expandable tubular member by the first adjustable expansion device;

means for displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the expandable tubular member;

means for decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device;

means for displacing the second adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform portions of the expandable tubular member above the lower portion of the expandable tubular member; and

means for pressurizing an interior region of the expandable tubular member above the second adjustable expansion device during the radial expansion of the portions of the expandable tubular member above the lower portion of the expandable tubular member by the second adjustable expansion device;

wherein the outside dimension of the first adjustable expansion device is greater than the outside dimension of the second adjustable expansion device.

399. A system for forming a mono diameter wellbore casing, comprising:

means for positioning first and second adjustable expansion devices within a first expandable tubular member;

means for supporting the first expandable tubular member and the first and second

adjustable expansion devices within a borehole;

means for lowering the first adjustable expansion device out of the first expandable tubular member;

means for increasing the outside dimension of the first adjustable expansion device;

displacing the first adjustable expansion device upwardly relative to the first expandable tubular member to radially expand and plastically deform a lower portion of the first expandable tubular member;

means for pressurizing an interior region of the first expandable tubular member above the first adjustable expansion device during the radial expansion of the lower portion of the first expandable tubular member by the first adjustable expansion device;

means for displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the first expandable tubular member;

means for decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device;

means for displacing the second adjustable expansion device upwardly relative to the first expandable tubular member to radially expand and plastically deform portions of the first expandable tubular member above the lower portion of the expandable tubular member;

means for pressurizing an interior region of the first expandable tubular member above the second adjustable expansion device during the radial expansion of the portions of the first expandable tubular member above the lower portion of the first expandable tubular member by the second adjustable expansion device;

means for positioning first and second adjustable expansion devices within a second expandable tubular member;

means for supporting the first expandable tubular member and the first and second adjustable expansion devices within the borehole in overlapping relation to the first expandable tubular member;

means for lowering the first adjustable expansion device out of the second expandable tubular member;

means for increasing the outside dimension of the first adjustable expansion device;

means for displacing the first adjustable expansion device upwardly relative to the second expandable tubular member to radially expand and plastically deform a lower portion of the second expandable tubular member;

means for pressurizing an interior region of the second expandable tubular member

above the first adjustable expansion device during the radial expansion of the lower portion of the second expandable tubular member by the first adjustable expansion device;

means for displacing the first adjustable expansion device and the second adjustable expansion device downwardly relative to the second expandable tubular member;

means for decreasing the outside dimension of the first adjustable expansion device and increasing the outside dimension of the second adjustable expansion device;

means for displacing the second adjustable expansion device upwardly relative to the second expandable tubular member to radially expand and plastically deform portions of the second expandable tubular member above the lower portion of the second expandable tubular member; and

means for pressurizing an interior region of the second expandable tubular member above the second adjustable expansion device during the radial expansion of the portions of the second expandable tubular member above the lower portion of the second expandable tubular member by the second adjustable expansion device;

wherein the outside dimension of the first adjustable expansion device is greater than the outside dimension of the second adjustable expansion device.

400.89. A system for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

means for supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion device within the borehole;

means for increasing the size of the adjustable expansion device; and

means for displacing the adjustable expansion device upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform a portion of the expandable tubular member.

401. The system of claim 400, further comprising:

means for reducing the size of the adjustable expansion device after the portion of the expandable tubular member has been radially expanded and plastically deformed.

402. The system of claim 401, further comprising:

means for fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member after reducing the size of the adjustable expansion device.

403. The system of claim 402, further comprising:

means for permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.

404. The system of claim 403, further comprising:

means for injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and a preexisting structure after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

405. The system of claim 403, further comprising:

means for increasing the size of the adjustable expansion device after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

406. The system of claim 405, further comprising:

means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform another portion of the expandable tubular member.

407. The system of claim 406, further comprising:

if the end of the other portion of the expandable tubular member overlaps with a preexisting structure, then

means for not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator; and

means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the other portion of the expandable tubular member that overlaps with the preexisting structure.

~~408.~~**90.** A system for forming a mono diameter wellbore casing within a borehole that includes a preexisting wellbore casing, comprising:

means for supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion device within the borehole;

means for increasing the size of the adjustable expansion device;

means for displacing the adjustable expansion device upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform a portion of the expandable tubular member; and

means for displacing the adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member and a portion of the preexisting wellbore casing that overlaps with an end of the remaining portion of the expandable tubular member.

~~409. The system of claim 408, further comprising:~~

~~means for reducing the size of the adjustable expansion device after the portion of the expandable tubular member has been radially expanded and plastically deformed.~~

~~410. The system of claim 409, further comprising:~~

~~means for fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member after reducing the size of the adjustable expansion device.~~

~~411. The system of claim 410, further comprising:~~

~~means for permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.~~

~~412. The system of claim 411, further comprising:~~

~~means for injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the borehole after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.~~

~~413. The system of claim 411, further comprising:~~

~~means for increasing the size of the adjustable expansion device after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.~~

~~414. The system of claim 413, further comprising:~~

~~means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member.~~

~~415. The system of claim 414, further comprising:~~

~~means for not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator; and~~

~~means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the remaining portion of the expandable tubular member that overlaps with the preexisting wellbore casing after not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.~~

~~416.~~**91.** A system for radially expanding and plastically deforming a tubular member, comprising:

means for positioning the tubular member within a preexisting structure;

means for radially expanding and plastically deforming a lower portion of the tubular member to form a bell section; and

means for radially expanding and plastically deforming a portion of the tubular member above the bell section.

~~417. The system of claim 416, wherein positioning the tubular member within a preexisting structure comprises:~~

~~means for locking the tubular member to an expansion device.~~

418. The system of claim 417, wherein the outside diameter of the expansion device is less than the inside diameter of the tubular member.

419. The system of claim 417, wherein the expansion device is positioned within the tubular member.

420. The system of claim 417, wherein the expansion device comprises an adjustable expansion device.

421. The system of claim 420, wherein the adjustable expansion device is adjustable to a plurality of sizes.

422. The system of claim 417, wherein the expansion device comprises a plurality of expansion devices.

423. The system of claim 422, wherein at least one of the expansion devices comprises an adjustable expansion device.

424. The system of claim 423, wherein at least one of the adjustable expansion device is adjustable to a plurality of sizes.

425. The system of claim 416, wherein means for radially expanding and plastically deforming a lower portion of the tubular member to form a bell section comprises:

means for lowering an expansion device out of an end of the tubular member; and

means for pulling the expansion device through the end of the tubular member.

426. The system of claim 425, wherein means for lowering an expansion device out of an end of the tubular member comprises:

means for lowering the expansion device out of the end of the tubular member; and

means for adjusting the size of the expansion device.

427. The system of claim 426, wherein the adjustable expansion device is adjustable to a plurality of sizes.

428. The system of claim 426, wherein the expansion device comprises a plurality of

adjustable expansion devices.

429. The system of claim 428, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

430. The system of claim 425, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for gripping the tubular member; and

means for pulling an expansion device through an end of the tubular member.

431. The system of claim 430, wherein means for gripping the tubular member comprises:

means for permitting axial displacement of the tubular member in a first direction; and

means for not permitting axial displacement of the tubular member in a second direction.

432. The system of claim 430, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for pulling the expansion device through the end of the tubular member using an actuator.

433. The system of claim 416, wherein means for radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:

means for lowering an expansion device out of an end of the tubular member; and

means for pulling the expansion device through the end of the tubular member.

434. The system of claim 433, wherein means for lowering an expansion device out of an end of the tubular member comprises:

means for lowering the expansion device out of the end of the tubular member; and

means for adjusting the size of the expansion device.

435. The system of claim 434, wherein the adjustable expansion device is adjustable to a plurality of sizes.

436. The system of claim 434, wherein the expansion device comprises a plurality of adjustable expansion devices.

437. The system of claim 436, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

438. The system of claim 433, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for gripping the tubular member; and

means for pulling an expansion device through an end of the tubular member.

439. The system of claim 438, wherein means for gripping the tubular member comprises:

means for permitting axial displacement of the tubular member in a first direction; and

means for not permitting axial displacement of the tubular member in a second direction.

440. The system of claim 438, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for pulling the expansion device through the end of the tubular member using an actuator.

441. The system of claim 433, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for pulling the expansion device through the end of the tubular member using fluid pressure.

442. The system of claim 441, wherein means for pulling the expansion device through the end of the tubular member using fluid pressure comprises:

means for pressurizing an annulus within the tubular member above the expansion device.

443. The system of claim 416, wherein means for radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:

means for fluidicly sealing an end of the tubular member; and

means for pulling the expansion device through the tubular member.

444. The system of claim 443, wherein the expansion device is adjustable.

445. The system of claim 444, wherein the expansion device is adjustable to a plurality of

~~sizes.~~

~~446. The system of claim 443, wherein the expansion device comprises a plurality of adjustable expansion devices.~~

~~447. The system of claim 446, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.~~

~~448. The system of claim 443, wherein means for pulling the expansion device through the end of the tubular member comprises:~~

~~means for gripping the tubular member; and~~

~~means for pulling an expansion device through an end of the tubular member.~~

~~449. The system of claim 448, wherein means for gripping the tubular member comprises:~~

~~means for permitting axial displacement of the tubular member in a first direction; and~~

~~means for not permitting axial displacement of the tubular member in a second direction.~~

~~450. The system of claim 448, wherein means for pulling the expansion device through the end of the tubular member comprises:~~

~~means for pulling the expansion device through the end of the tubular member using an actuator.~~

~~451. The system of claim 443, wherein means for pulling the expansion device through the end of the tubular member comprises:~~

~~means for pulling the expansion device through the end of the tubular member using fluid pressure.~~

~~452. The system of claim 451, wherein means for pulling the expansion device through the end of the tubular member using fluid pressure comprises:~~

~~means for pressurizing an annulus within the tubular member above the expansion device.~~

~~453. The system of claim 416, wherein means for radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:~~

~~means for overlapping the portion of the tubular member above the bell section with an~~

end of a preexisting tubular member; and

means for pulling an expansion device through the overlapping portions of the tubular member and the preexisting tubular member.

454. The system of claim 453, wherein the expansion device is adjustable.

455. The system of claim 454, wherein the expansion device is adjustable to a plurality of sizes.

456. The system of claim 453, wherein the expansion device comprises a plurality of adjustable expansion devices.

457. The system of claim 456, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

458. The system of claim 453, wherein means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:

means for gripping the tubular member; and

means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member.

459. The system of claim 458, wherein means for gripping the tubular member comprises:

means for permitting axial displacement of the tubular member in a first direction; and

means for not permitting axial displacement of the tubular member in a second direction.

460. The system of claim 458, wherein means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:

means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using an actuator.

461. The system of claim 453, wherein means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:

means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using fluid pressure.

~~462. The system of claim 461, wherein means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using fluid pressure comprises:~~

~~means for pressurizing an annulus within the tubular member above the expansion device.~~

~~463. The system of claim 453, further comprising:~~

~~means for cutting an end of the portion of the tubular member that overlaps with the preexisting tubular member.~~

~~464. The system of claim 463, further comprising:~~

~~means for removing the cut off end of the expandable tubular member from the preexisting structure.~~

~~465. The system of claim 416, further comprising:~~

~~means for injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the preexisting structure.~~

~~466. The system of claim 416, further comprising:~~

~~means for cutting off an end of the expandable tubular member.~~

~~467. The system of claim 466, further comprising:~~

~~means for removing the cut off end of the expandable tubular member from the preexisting structure.~~

~~468.~~**92.** A system of radially expanding and plastically deforming a tubular member, comprising:

a support member; and

means for applying internal pressure **simultaneously** to the inside surface of the tubular member at a plurality of discrete location separated from one another coupled to the support member.

~~469. [A method of cutting a tubular member, comprising:]~~

~~[positioning a plurality of cutting elements within the tubular member; and]~~

~~[bringing the cutting elements into engagement with the tubular member.]~~

~~470. The method of claim 469,[wherein the cutting elements comprise:]~~

~~[a first group of cutting elements; and]~~

~~[a second group of cutting elements;]~~

~~[wherein the first group of cutting elements are interleaved with the second group of cutting elements.]~~

~~471. The method of claim 469,[wherein bringing the cutting elements into engagement with the tubular member comprises:]~~

~~[bringing the cutting elements into axial alignment.]~~

~~472. The method of claim 471,[wherein bringing the cutting elements into engagement with the tubular member further comprises:]~~

~~[pivoting the cutting elements.]~~

~~473. The method of claim 471,[wherein bringing the cutting elements into engagement with the tubular member further comprises:]~~

~~[translating the cutting elements.]~~

~~474. The method of claim 471,[wherein bringing the cutting elements into engagement with the tubular member further comprises:]~~

~~[pivoting the cutting elements; and]~~

~~[translating the cutting elements.]~~

~~475. The method of claim 469,[wherein bringing the cutting elements into engagement with the tubular member comprises:]~~

~~[rotating the cutting elements about a common axis.]~~

~~476. The method of claim 469,[wherein bringing the cutting elements into engagement with the tubular member comprises:]~~

~~[pivoting the cutting elements about corresponding axes;]~~

~~[translating the cutting elements; and]~~

~~[rotating the cutting elements about a common axis.]~~

~~477. The method of claim 469, further [comprising]:~~

[preventing the cutting elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value.]

478. The method of claim 477,[wherein preventing the cutting elements from coming into engagement] with the tubular member [if the inside diameter of the tubular member is less than a predetermined value comprises:]

[sensing the inside diameter of the tubular] member.

479. [A method of gripping a tubular member, comprising:]

[positioning a plurality of gripping elements within the tubular member;] and

[bringing the gripping elements into engagement with] the tubular member.

480. The method of claim 479,[wherein bringing the gripping elements into engagement with the tubular member comprises:]

[displacing the gripping elements in an axial direction; and]

[displacing the gripping elements in a radial direction.]

481. The method of claim 479, further comprising:

[biasing the gripping elements against engagement with the tubular] member.

482. A method of operating an actuator, comprising:

pressurizing a plurality of pressure chamber.

483. The method of claim 482, further comprising:

transmitting torsional loads.

484.**93.** A method of injecting a hardenable fluidic sealing material into an annulus between a tubular member and a preexisting structure, comprising:

positioning the tubular member into the preexisting structure;

sealing off an end of the tubular member;

operating a valve within the end of the tubular member; and

injecting a hardenable fluidic sealing material through the valve into the annulus between the tubular member and the preexisting structure.

485.**94.** A system for cutting a tubular member, comprising:

means for positioning a plurality of cutting elements within the tubular member; and

means for bringing the cutting elements into engagement with the tubular member.

~~486. The system of claim 485, wherein the cutting elements comprise:~~

~~a first group of cutting elements; and~~

~~a second group of cutting elements;~~

~~wherein the first group of cutting elements are interleaved with the second group of cutting elements.~~

~~487. The system of claim 485, wherein means for bringing the cutting elements into engagement with the tubular member comprises:~~

~~means for bringing the cutting elements into axial alignment.~~

~~488. The system of claim 485, wherein means for bringing the cutting elements into engagement with the tubular member further comprises:~~

~~means for pivoting the cutting elements.~~

~~489. The system of claim 485, wherein means for bringing the cutting elements into engagement with the tubular member further comprises:~~

~~means for translating the cutting elements.~~

~~490. The system of claim 485, wherein means for bringing the cutting elements into engagement with the tubular member further comprises:~~

~~means for pivoting the cutting elements; and~~

~~means for translating the cutting elements.~~

~~491. The method of claim 485, wherein means for bringing the cutting elements into engagement with the tubular member comprises:~~

~~means for rotating the cutting elements about a common axis.~~

~~492. The system of claim 485, wherein means for bringing the cutting elements into engagement with the tubular member comprises:~~

~~means for pivoting the cutting elements about corresponding axes;~~

~~means for translating the cutting elements; and~~

~~means for rotating the cutting elements about a common axis.~~

~~493. The system of claim 485, further comprising:~~

~~means for preventing the cutting elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value.~~

~~494. The system of claim 493, wherein means for preventing the cutting elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value comprises:~~

~~means for sensing the inside diameter of the tubular member.~~

~~495. A system for gripping a tubular member, comprising:~~

~~means for positioning a plurality of gripping elements within the tubular member; and~~

~~means for bringing the gripping elements into engagement with the tubular member.~~

~~496. The system of claim 495, wherein means for bringing the gripping elements into engagement with the tubular member comprises:~~

~~means for displacing the gripping elements in an axial direction; and~~

~~means for displacing the gripping elements in a radial direction.~~

~~497. The system of claim 495, further comprising:~~

~~means for biasing the gripping elements against engagement with the tubular member.~~

~~498.~~**95.** An actuator system, comprising:

a support member; and

means for pressurizing a plurality of pressure chambers coupled to the support member.

~~499. The system of claim 498, further comprising:~~

~~means for transmitting torsional loads.~~

~~500. A system for injecting a hardenable fluidic sealing material into an annulus between a tubular member and a preexisting structure, comprising:~~

~~means for positioning the tubular member into the preexisting structure;~~

~~means for sealing off an end of the tubular member;~~

~~means for operating a valve within the end of the tubular member; and~~

means for injecting a hardenable fluidic sealing material through the valve into the annulus between the tubular member and the preexisting structure.

501. A method of engaging a tubular member, comprising:

positioning a plurality of elements within the tubular member; and

bringing the elements into engagement with the tubular member.

502. The method of claim 501, wherein the elements comprise:

a first group of elements; and

a second group of elements;

wherein the first group of elements are interleaved with the second group of elements.

503. The method of claim 501, wherein bringing the elements into engagement with the tubular member comprises:

bringing the elements into axial alignment.

504. The method of claim 501, wherein bringing the elements into engagement with the tubular member further comprises:

pivoting the elements.

505. The method of claim 501, wherein bringing the elements into engagement with the tubular member further comprisee:

translating the elements.

506. The method of claim 501, wherein bringing the elements into engagement with the tubular member further comprises:

pivoting the elements; and

translating the elements.

507. The method of claim 501, wherein bringing the elements into engagement with the tubular member comprises:

rotating the elements about a common axis.

508. The method of claim 501, wherein bringing the elements into engagement with the tubular member comprises:

pivoting the elements about corresponding axes;

translating the elements; and

rotating the elements about a common axis.

509. The method of claim 501, further comprising:

preventing the elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value.

510. The method of claim 509, wherein preventing the elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value comprises:

sensing the inside diameter of the tubular member.

511. A system for engaging a tubular member, comprising:

means for positioning a plurality of elements within the tubular member; and

means for bringing the elements into engagement with the tubular member.

512. The system of claim 511, wherein the elements comprise:

a first group of elements; and

a second group of elements;

wherein the first group of elements are interleaved with the second group of elements.

513. The system of claim 511, wherein means for bringing the elements into engagement with the tubular member comprises:

means for bringing the elements into axial alignment.

514. The system of claim 511, wherein means for bringing the elements into engagement with the tubular member further comprises:

means for pivoting the elements.

515. The system of claim 511, wherein means for bringing the elements into engagement with the tubular member further comprises:

means for translating the elements.

~~516. The system of claim 511, wherein means for bringing the elements into engagement with the tubular member further comprises:~~

~~means for pivoting the elements; and~~

~~means for translating the elements.~~

~~517. The system of claim 511, wherein means for bringing the elements into engagement with the tubular member comprises:~~

~~means for rotating the elements about a common axis.~~

~~518. The system of claim 511, wherein means for bringing the elements into engagement with the tubular member comprises:~~

~~means for pivoting the elements about corresponding axes;~~

~~means for translating the elements; and~~

~~means for rotating the elements about a common axis.~~

~~519. The system of claim 511, further comprising:~~

~~means for preventing the elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value.~~

~~520. The system of claim 519, wherein means for preventing the elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value comprises:~~

~~means for sensing the inside diameter of the tubular member.~~

Remarks

Claims 1-520 were previously pending.

Claims 1-95 were amended and are as filed in the substitute specification.

Claims 96-520 have been canceled without prejudice or disclaimer.

As a result, claims 1-95 are pending.

A marked up copy of the claims are submitted herewith, without prejudice or disclaimer, claims 1-95 were amended and claims 96-520 were cancelled in the substitute specification as filed on September 30, 2005. No further amendments have been made.

Applicant does not believe there are any fees associated with this filing. However, the Commissioner s hereby authorized to charge or credit any fees to our Deposit Account No.08-1394, Order No. 25791.270.06.

Respectfully submitted,

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I hereby certify that this correspondence is being filed with the U.S. Patent and Trademark Office via EFS-Web on June 22, 2006

Stacy Lanier

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